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Empirical analysis of sustainable fisheries and the relation to economic performance enhancement: The case of the Spanish fishing industry



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ABSTRACT

Sustainability and fishery must be a linked concept when considering the future of the natural resources. The environmental impacts of global seafood production and the effects of the intensive exploitation of our seas and oceans are indeed an issue under study and regulation. To minimize the negative effects of the fishing activity over the environment a growing number of companies are joining the Marine Stewardship Council (MSC) certification. The MSC is a leading wild-capture fisheries certification program that involves the fishing chain of custody. The increase in the number of certifications confirms that the seafood processing industry suggest their consideration of the environmental orientation as a key element of their strategies. In this paper the MSC certification and its implications for companies' value creation process are analyzed. To do so, data from 561 Spanish firms is retrieved and a multivariate quantitative analysis is deployed. Results show that there is a difference in the economic performance of businesses that were MSC-certified over those that were not and the moderating role of size.

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1. Introduction

There is growing concern about the sustainability of the existing fishing model. In fact, the environmental impacts of global seafood production are well known [1]. Issues such as the over-exploitation of many species [2], the effects of fishing on entire ecosystems [3], or the reduction of marine biodiversity [4] are just some of the main environmental problems related to the intensive exploitation of our seas and oceans.

This concern for the sustainability of the seas not only affects fishing but is spread across all industries related to fish processing as well as distribution. In fact, environmental concerns have moved from being considered to be a matter of goodwill to becoming a key issue for competitiveness in many sectors [5], especially those related to food [6].

The need to be proactive on environmental issues has encouraged the use of eco-labeling and certification schemes, which are increasingly used in the global trade and marketing of fish and fish products [7]. In fact, several market studies carried out in the European Union show that consumers are concerned about the

health of the oceans and would be willing to buy seafood preferably labeled as environmentally responsible [8,9].

Large-scale retailers and food services now drive demand for certified fishery products in relation to food safety and quality, sustainability and social criteria [10]. Hence, eco-labels and certification schemes could improve access to certain markets and provide a price premium for fish products.

In recent years, different standards for sustainably managed fisheries have appeared, some of which have been developed by governments or Regional Fisheries Management Organizations, such as excellent examples in New Zealand and the United States [11], along with other certificates created by environmental non-governmental organizations such as the Marine Stewardship Council (MSC), the Friends of the Sea or the KRAV certificate [12].

Seafood certification has two main goals. The first aim is to identify producers that meet defined ecological standards that allow retailers and consumers to trust products; the second and main target of seafood certification is to enhance sustainability and incentivize environmental improvement within a production sector [13].

Among the various seafood certifications, we should outline two: Dolphin-safe Labels and MSC certification. In this paper, we focus on the latter. The MSC is a leading wild-capture fisheries certification program. A total of 10% of global fish catches have or

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are in the process of being certified. This certificate has the peculiarity that all companies in the supply chain – from boat to plate – must obtain the MSC chain of custody certificate. Indeed, there had been an annual increase of 100% in MSC chain of custody-certified products for sale in the world by the end of 2010 to nearly 10,000 products [14].

Focusing on the Spanish market, unlike other European countries, the introduction of MSC certification is very recent. However, in Spain the increase in MSC-certified products is about 200% annually [14]. These figures lead us to hypothesize that *MSC certification contributes to creating value in the seafood processing industry by improving economic performance (Hypothesis 1)*. Moreover, it is interesting to study if firm size affects the influence of MSC certification on economic performance, which allows us to validate whether *MSC certification has an unequal influence on the economic performance of firms according to their size (Hypothesis 2)*.

The originality of this is the fact that we study the economic impact of adopting the MSC chain of custody certification on businesses. Although this type of analysis has been carried out with other environmental certificates and eco-labels, the analyses of the benefits of the MSC have thus far focused on fisheries [15,16]. The objective of this analysis is to go further and see how it affects the next step of the chain, the seafood processing industry.

2. Theory

2.1. Environmental sustainability and management

Companies are putting sustainability at the heart of their business strategies. Taking care of the environment allows the firm to reach new markets and to differentiate them from competitors [17].

Companies aim to incorporate their environmental orientations through different environmental tools such as environmental management systems or eco-labels. Although these facts are generalizable to most sectors, they seem to be particularly important at the food industry [18]. Repeated food scares have placed matters related to quality, safety and the environment as key aspects of food industry management [19].

At the food industry, it is particularly important to distinguish between eco-labeling and environmental certification [20]. On one hand, the industry design and apply systems are aimed at incorporating environmentally sustainable management tools such as ISO 14001 and the EMAS certification [21]. On the other hand, the numerous existing eco-labels inform customers about the specific environmental attributes in the product, general attributes as in the case of the European Eco-label or specific product labels such as organic food or sustainable fishing.

In both cases, there is an extensive literature linking higher corporate profits with a proactive environmental attitude [22]. In the case of eco-labeling, which is the focus of this study, studies relate organic labeling to better prices and profits in industries as diverse as coffee [23], baby food [24] and cotton garments [25].

In the specific case of fishing, there is growing demand for fish products that ensure a minimum guarantee of sustainability; thus, many companies related to the sector are putting sustainability at the core of their business strategies.

Environmental concern is not new; one of the oldest and most popular labels is given within the fisheries sector: the dolphin-safe label. The reasons for its rapid and successful implementation have been extensively studied [26,27], and its positive effects on the performances of companies have been verified [28]. The problem with the dolphin-safe label is that it focuses on a specific environmental problem, for which it is necessary to obtain a more general fishing certificate. The MSC has become the reference

fishing certificate in recent years. Its characteristics are explained fully in the next section, but it is significant that it follows the model of the Forest Stewardship Council (FSC). This certificate along with other sectorial initiatives such as the Sustainable Forestry Initiative prompted substantial changes in forest practices by managers who believed that the benefits of forest certification were greater than the disadvantages [29].

Although there are several studies analyzing the environmental impact of adopting environmental certificates and labels [30], the effects of certification and eco-labeling in marine conservation still generate many questions and debates [31]. This paper does not analyze the effects of MSC certification on the environment but focuses on analyzing the economic effects for companies that adopt it. Previous works have focused on the food industry and these relate a proactive environmental attitude to productivity improvements and competitiveness [32]. Several studies have also analyzed the economic effects of eco-labels, environmental management certificates such as ISO 14001 or similar certificates such as the FSC. However, the difference is that in MSC-certified fisheries it is difficult to quantify its impact on companies. Nevertheless, as presented in the next section, the certification of seafood does not end with the fishery but rather all companies – from boat to plate – must obtain the MSC chain of custody certificate. This means that many companies in the supply chain have to be certified and, therefore, we can assume that their economic figures are conditioned by the adoption or not of the MSC certificate.

In these studies, a factor to consider is the size of the companies, which influence organizational behavior because of the higher level of specialization, standardization and formalization [33]. Indeed, several studies indicate firm size as one of the key factors in adopting any type of environmental innovation [34].

2.2. MSC chain of custody certification

The World Wildlife Fund in partnership with the multinational Unilever founded the MSC in 1997, although in 1999, the MSC became a fully independent non-profit organization that was seen by environmental organizations and the fishing industry alike as an essential step to gaining credibility as a neutral body in a multi-stakeholder industry [35]. The initiation of the MSC was inspired by the success of the FSC, and the similarity of their names and logos was no coincidence [36].

MSC certification has generated debate about whether to focus on environmental issues or extend it to social and development issues [37] and whether to certify aquaculture initiatives [38]. However, the MSC focuses primarily on fishing operations and environmental issues in wild-capture fisheries.

On both the supply side and the demand side, MSC certification has become crucial in recent years. In early 2011, 250 fisheries were in some stage of the evaluation process, an increase of 34% over the previous year. Likewise, on the demand side, there has been an exponential increase in the use of the MSC eco-label in the market, with more than 1600 companies in 80 countries accredited with the MSC chain of custody. In addition, annual sales of MSC-certified products have exceeded \$2.5 billion in retail value, covering almost 10,000 product lines. The most important countries in terms of the number of products sold are Germany (about 3000 products), the Netherlands, the UK and the US. In Spain and Portugal, the MSC certificate was introduced recently, but in one year it has experienced increases of 200%.

Despite its commercial success, the MSC certificate has also been criticized and analyzed from different perspectives [39,40]. The main criticism about the certification is its doubtful capacity to solve MSC-related environmental problems in the fisheries industry [41,42]. Other significant criticisms stem from its excessive flexibility and

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